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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/644,088 | 08/20/2003 | Fujio Akahane | Q77070 | 4967 |

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EXAMINER

CRANE, DANIEL C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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3725

DATE MAILED: 06/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,088

Applicant(s)

AKAHANE ET AL.

Examiner

Daniel C. Crane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) 12-18 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DRAWING OBJECTION

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature where the reference part is “between” the first region, which is defined by the recess portions, and the forging die must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

REJECTION OF CLAIMS ON FORMAL MATTERS

Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification fails to show that the reference part is "between" the first region, which is defined by the recess portions, and the forging die.

REJECTION OF CLAIMS OVER PRIOR ART

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeglinski (4,425,777) in view of Rooney (5,144,709). Jeglinski discloses the basic method of manufacturing a liquid ejection head having chambers (funnel shaped region) and nozzles communicating with the chambers where the manufacturing includes a forging die 2. See column 3, last full paragraph, in Jeglinski where the plate is formed with a plurality of chambers and corresponding nozzles. It is well recognized in the progressive die art to provide a combination of reference holes and deformation absorbers so as to accommodate the shaping operation as the workpiece is sequentially fed through the dies. Rooney shows that this is known in the art by providing the metal plate 42 with reference parts 48, recess portions 85 (see Figure 3) at a first region and deformation absorbers 66, 72 in the form of cutouts at a second region between the first region and the reference part. Deformation absorbers 66, 72 are established in that cutouts cooperate with dog-bone inserts 82 inserted into the cutouts 66, 72. It would have

been obvious to the skilled artisan at the time of the invention to have modified Jeglinski's process by continuously forming the liquid ejection head while using reference parts and deformation absorbers using the concepts taught by Rooney so as to facilitate accurate shaping and centering of the product in the progressive dies. In accordance with long held decisions:

“We would note that it is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one skilled in the art the modification called for by the claims.” *In re Beckum et al.*, 169 USPQ 47.

As to claim 3, applicant's attention is directed to column 5, lines 57-62, of Rooney where the shape of the cutouts (deformation absorbers) in conjunction with the dog bone inserts 82 (also establishing the deformation absorbers) absorbs any deformation imparted during the cavity 85 forming to prevent the flow of metal into the reference part. As to claim 6, it is the examiner's position that the sequence of cutting operations relating to the reference part and deformation absorber would have been a matter of choice in the manufacture of the strip material. Note page 6, lines 15-16, where this is a matter of preference. Rooney shows that the reference part 48 is cut prior to the formation of the deformation absorber 66, 72 (see Figure 2). Since the sequence does not affect the overall manufacture of the part, it is maintained that it is dependent upon desired machine design. This also applies to the limitation of claim 11 where the skilled artisan would select various dimensions based upon desired structural needs in the ink jet and adjust the spacing between the recess portions as needed.

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RESPONSE TO APPLICANT'S COMMENTS

Applicant's comments have been carefully considered. As to the applicability of Jeglinski, this is considered tenable. The configuration of Jeglinski's nozzle comprises an entry end having a funnel shape and an exit end having a cylindrical shape. Clearly, the entry end forms a chamber that acts as a "pressure generating chamber" for the fluid that is forced into the exit end or cylindrical passage. Alternatively, the claim's preamble (claim 1) merely calls for a "first region formed with at least recess portions *to be* pressure generating chambers communicated with nozzles" (emphasis added). Thus, the "to be" clause is important because this implies future construction. The recess portions, when assembled into the ink jet machine, establish pressure generating chambers in communication with the nozzles.

As to applicant's argument directed to the position of the deformation absorber relative to the reference part and the recess portions, this is shown by Rooney, as discussed above.

With respect to applicant's comments relating to claim 11, note that the specification realizes that this is a matter of preference. See page 7, lines 18 and 19, of the specification. Again, this sizing depends upon the ink jet nozzle size and the needed printing capability of the printer, i.e., number of nozzles, size of nozzle aperture, print head arrangement, etc.

WITHDRAWAL OF NONELECTED CLAIMS

Claims 12-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on December 15, 2004.

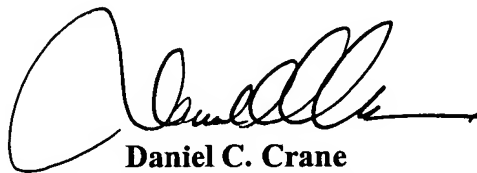
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INQUIRIES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner D. Crane whose telephone number is **(571) 272-4516**. The examiner's office hours are 6:30AM-5:00PM, Tuesday through Friday. The examiner's supervisor, Mr. Derris Banks, can be reached at **(571) 272-4419**.

Documents related to the instant application may be submitted directly to Group 3700 by facsimile transmission at all times. Applicant(s) is(are) reminded to clearly mark any transmission as "DRAFT" if it is not to be considered as an official response. The Group 3725 Facsimile Center number is **(703) 872-9306**. The Examiner's FAX number is **(571) 273-4516**.

DCCrane
June 17, 2005

A handwritten signature in black ink, appearing to read 'D. Crane', with a large, stylized initial 'D'.

Daniel C. Crane
Primary Patent Examiner
Group Art Unit 3725